HY16F18X Series
IDE Software User's Manual

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1. IDE Software Introduction

HY16F IDE software developing tool adopts AndeSight RDS version that is the newest generation of integrated developing environment of Andes Technology. It supports 32-bit CPU core (N801), which satisfies MCU customers' demand of fast product development.

AndeSight IDE software incorporates the interface designed by Andes Technology, a tool module that combines GCC GNU C Compiler and GDB Debugger of Eclipse IDE. Many firmware designers already are familiar with using IDE software to develop program. It is hard to use Command-Line to conduct GCC compiler and GDB debugging tool. AndeSight RDS IDE equips with powerful and easy-understanding graphical interface that is to use so designers can focus solely on product development.

2. IDE System Requirement

Minimum system requirements to run AndeSight RDS:

(1) PC/NB Hardware Requirements:
(1.1) IBM PC compatible X86 system CPU
(1.2) 2 GB DDR memory
(1.3) 5 GB HD disc

(2) Supporting Product Model No.:
(2.1) HY16F18X

(3) Hardware Supporting Model:
(3.1) HY16F18X developing tool

(4) Software Supporting Version:
(4.1) AndeSight RDSV2.0.1 or above version

(5) Operating System Requirements:
(5.1) Windows XP (32-bit system)
(5.2) Windows 7 (32/64-bit system)
(5.3) Windows 8 (32/64-bit system)

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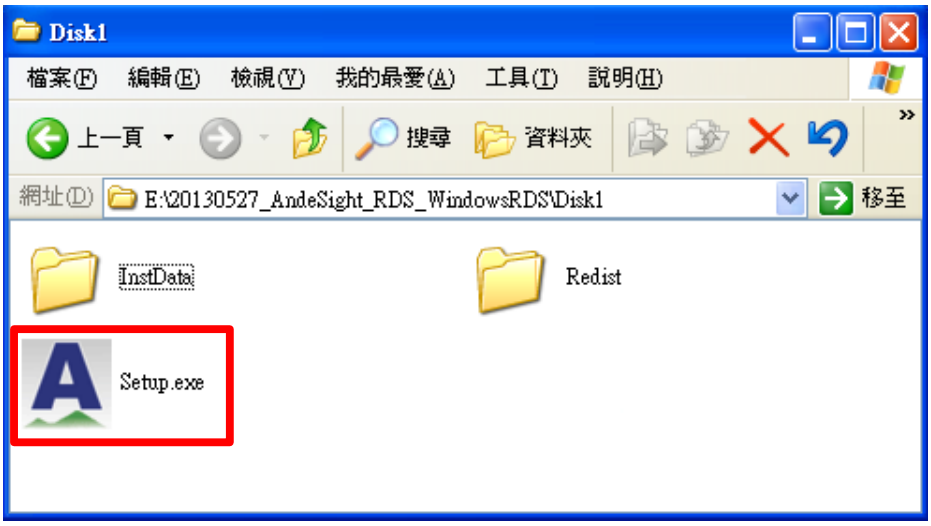
3. IDE Software Install

3.1 CD-Rom Contents

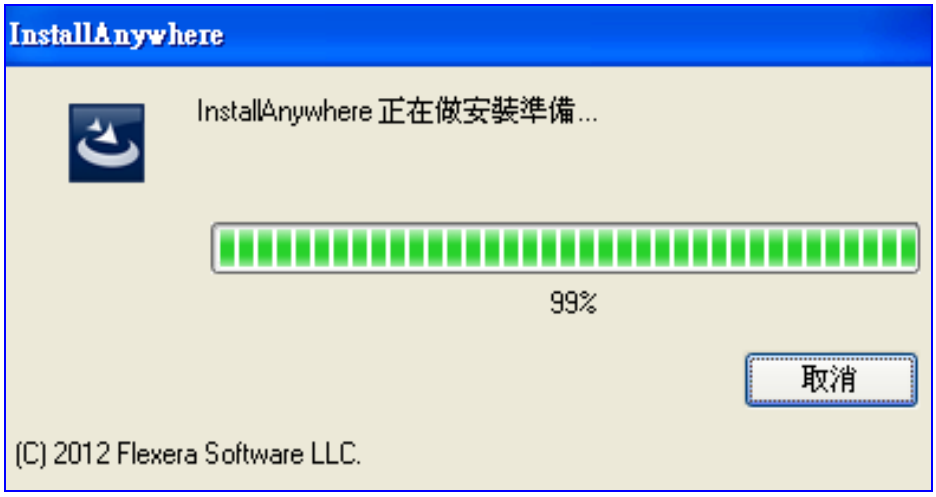
To install, run Step.exe of Disk1 and follow the instruction step by step.
Some Windows 7 and Windows 8 operating system may require administrator identify to install due to authority limits.

※A：Step.exe under Disk 1



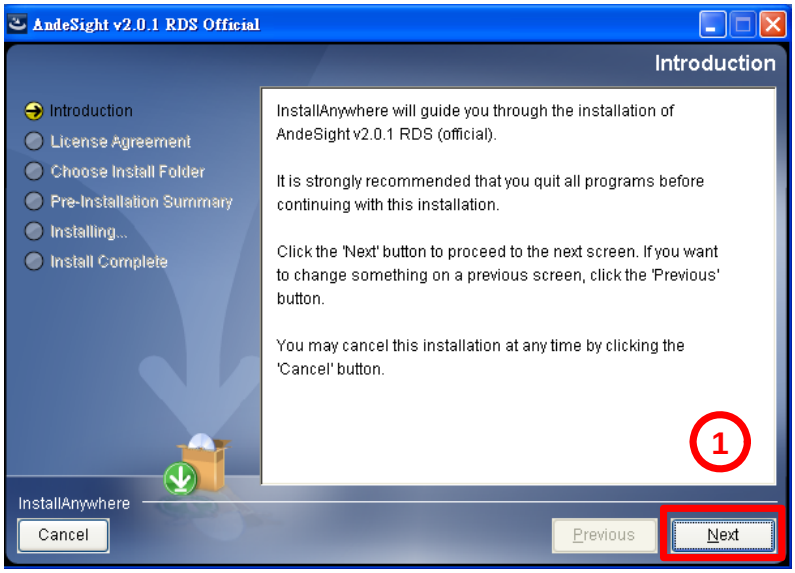
3.2 Install

※B：Get ready for Install Anywhere



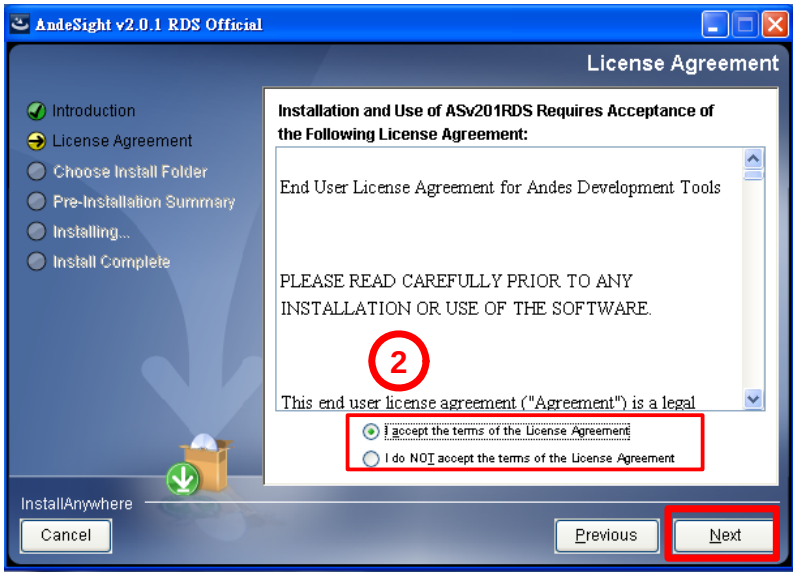
3.2.1Software Install Procedure 1

※01：Official install clicks NEXT


AndeSight v2.0.1 RDS Official
Introduction
Introduction
License Agreement
Choose Install Folder
Pre-Installation Summary
Installing...
Install Complete
InstallAnywhere will guide you through the installation of AndeSight v2.0.1 RDS (official).
It is strongly recommended that you quit all programs before continuing with this installation.
Click the 'Next' button to proceed to the next screen. If you want to change something on a previous screen, click the 'Previous' button.
You may cancel this installation at any time by clicking the 'Cancel' button.
1
InstallAnywhere
Cancel
Previous
Next

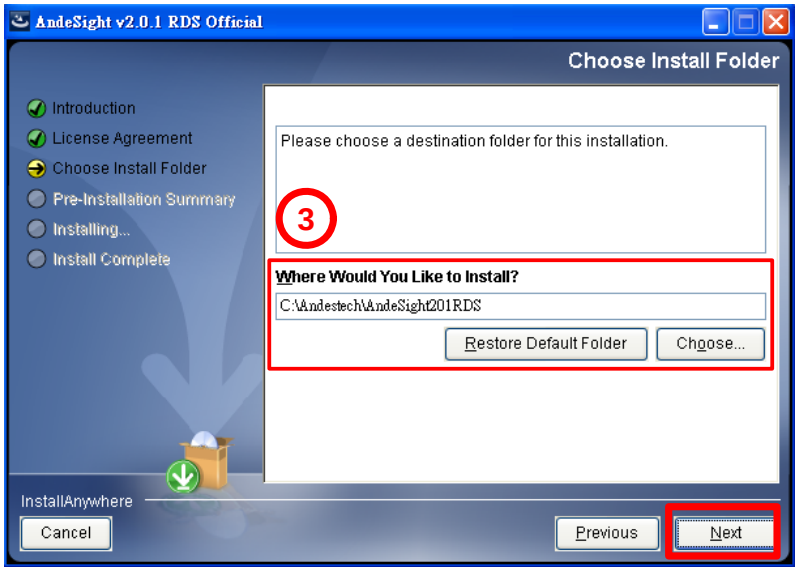
3.2.2 Software Install Procedure 2

※02：Press "I agree..." and clicks NEXT


AndeSight v2.0.1 RDS Official
License Agreement
Introduction
License Agreement
Choose Install Folder
Pre-Installation Summary
Installing...
Install Complete
Installation and Use of ASv201RDS Requires Acceptance of the Following License Agreement:
End User License Agreement for Andes Development Tools
PLEASE READ CAREFULLY PRIOR TO ANY INSTALLATION OR USE OF THE SOFTWARE.
2
This end user license agreement ("Agreement") is a legal
I accept the terms of the License Agreement
I do NOT accept the terms of the License Agreement
InstallAnywhere
Cancel
Previous
Next

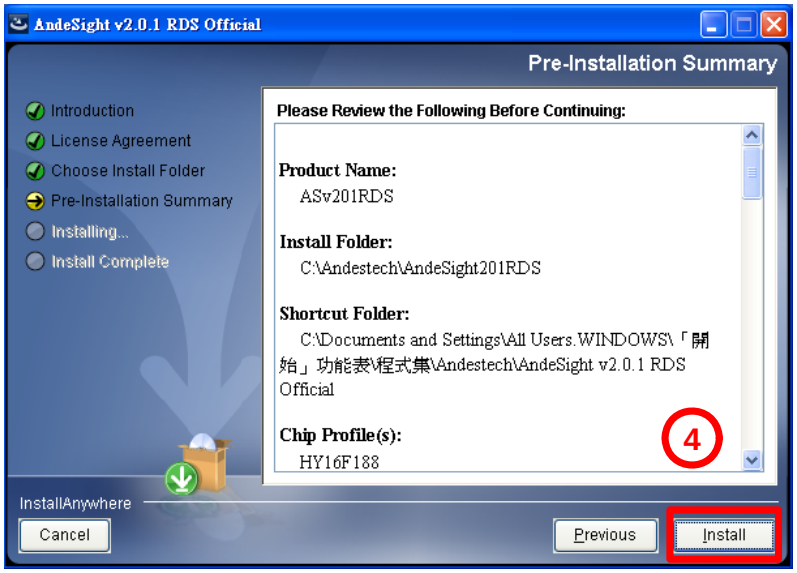
3.2.3 Software Install Procedure 3

※03：Set install menu. It is suggested to click NEXT first, do not change the address at this stage.



3.2.4 Software Install Procedure 4

※04：Review the install files and clicks NEXT

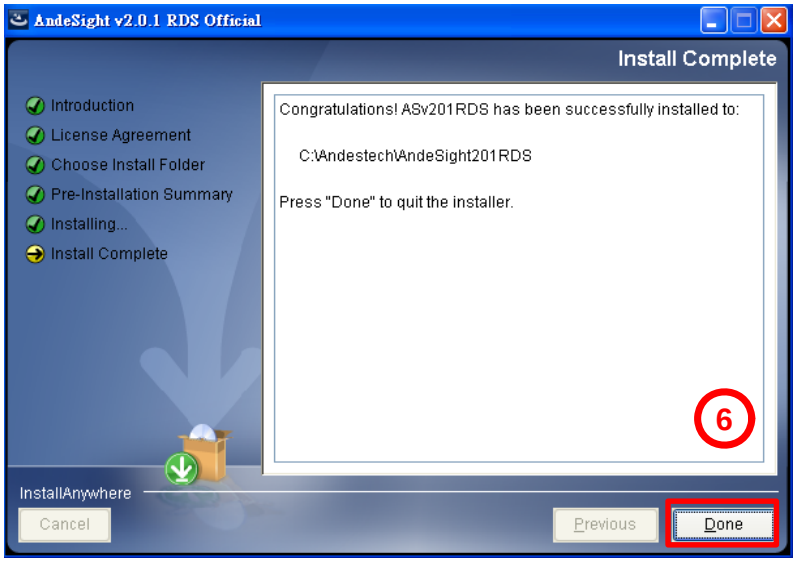


3.2.5 Software Install Procedure 5

※05：Install progress will appear for 3~5 minutes, depending on computer speed.

3.2.6 Software Install Procedure 6

※06：Press Done to complete.



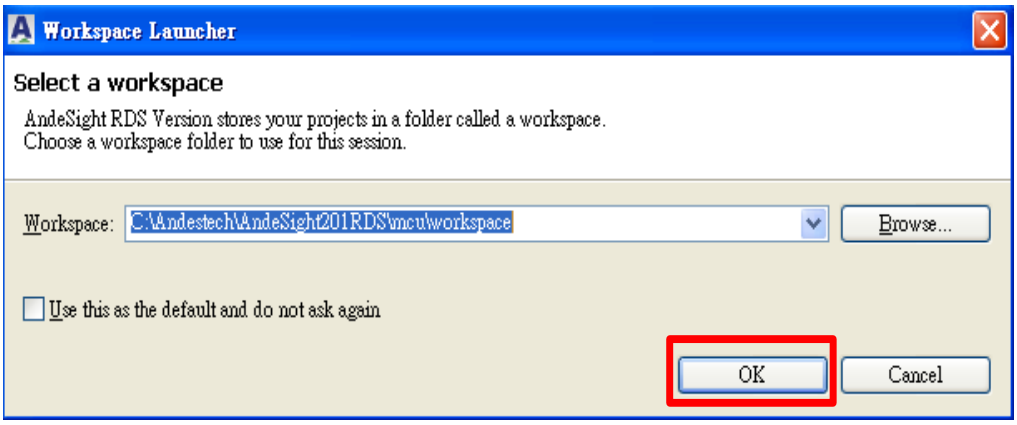
4.IDE Software Registration

Execute AndeSight.exe of AndeSight v2.0.1 RDS Official.
Some Windows 7 and Windows 8 operating system may require administrator identify to install due to authority limits.

4.1 Start Software

※A：This is the starting graph of IDE software

※B：Default address to store program: C:\Andestech\AndeSight201RDS\mcu\workspace. Users may assign the address by themselves.


Workspace Launcher
Select a workspace
AndeSight RDS Version stores your projects in a folder called a workspace.
Choose a workspace folder to use for this session.
Workspace:
C:\Andestech\AndeSight201RDS\mcu\workspace
Browse...
Use this as the default and do not ask again
OK
Cancel

4.2 Registration Procedures

4.2.1 Step 01

(1) Execute Setup.exe under CR-Rom

(2) Search for registration file under menu after install

Andes_license_for_HCN140117a39b8158af000001.txt

C:\Andestech\AndeSight201RDS\target\HY16F188

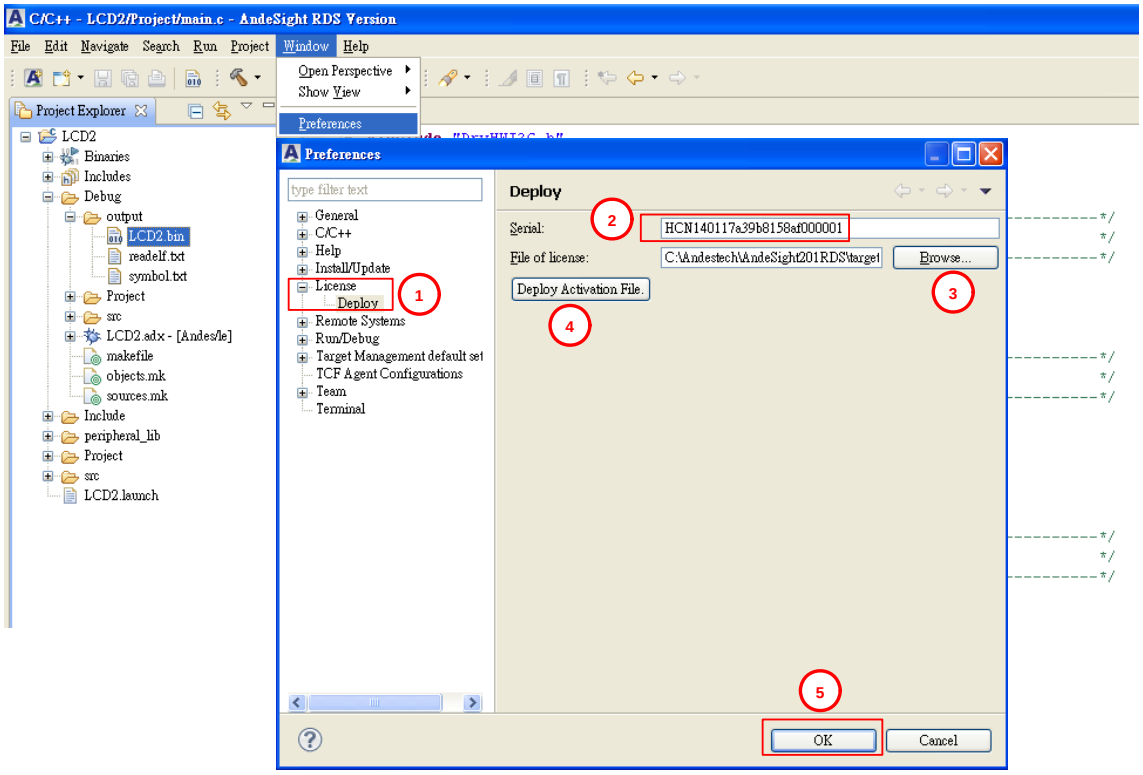
4.2.2 Step 02

Data preparation:

(A) Serial: HCN140117a39b8158af000001

(B) File of Licnese: Andes_license_for_HCN140117a39b8158af000001.txt

Run AndeSight RDS software:



(C) Preferences under Windows

(1) Click License

(2) Key in Serial: HCN140117a39b8158af000001

(3) Find File of license via Browse

C:\Andestech\AndeSight201RDS\target\

HY16F188\Andes_license_for_HCN140117a39b8158af000001.txt

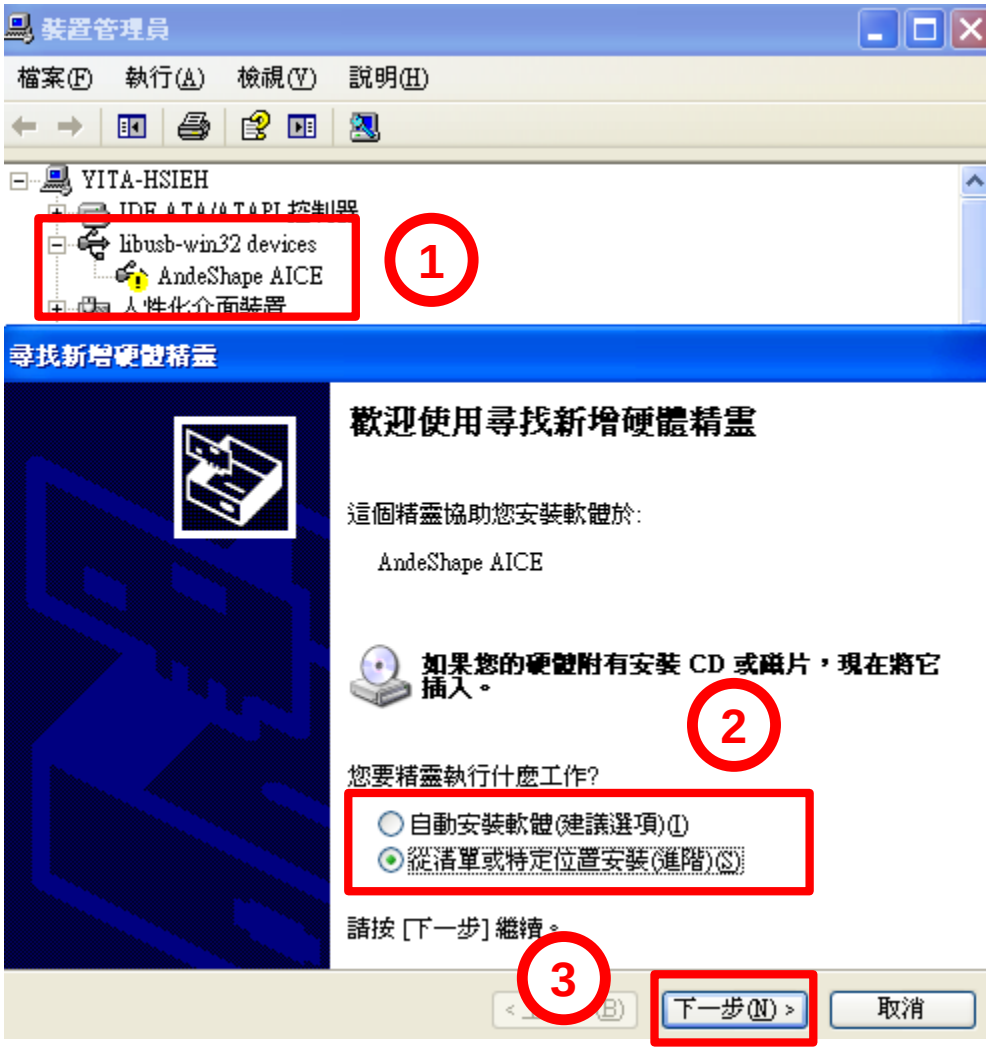
(4) Click Deploy Activation File to run software authentication (this is a must click item)

(5) Press OK to confirm

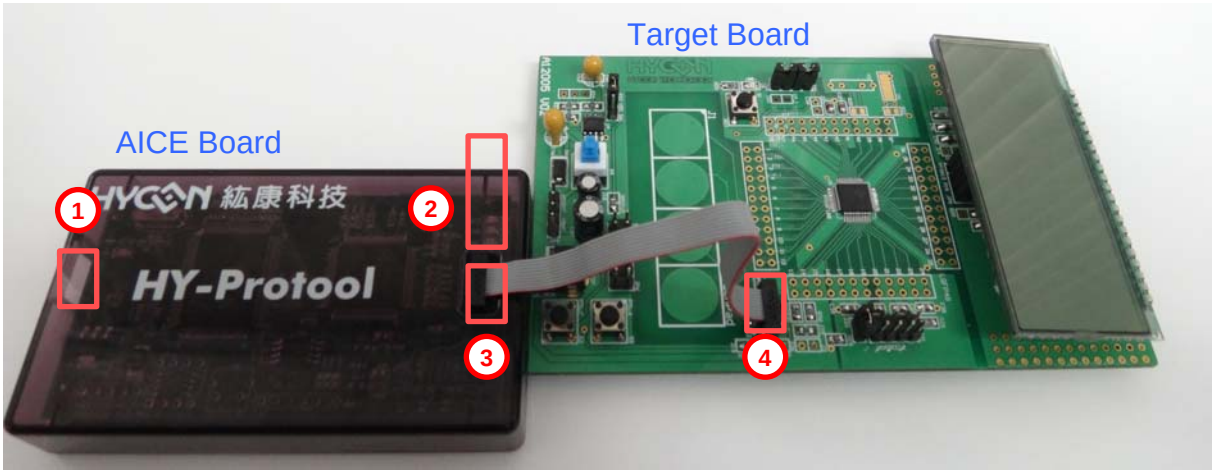
5. IDE Hardware Connection

After installation, user can connect to AICE. USB driver of AICE must be installed.
Driver path: C:\Andestech\AndeSight201RDS\ice\libusb-AndeShape-AICE-driver

※01：This symbol is very important. 1 must be installed to PC device manager and user must make sure the install is successful.
※02：Select install path, AICE driver.
※03：Press Next until the install's finished.



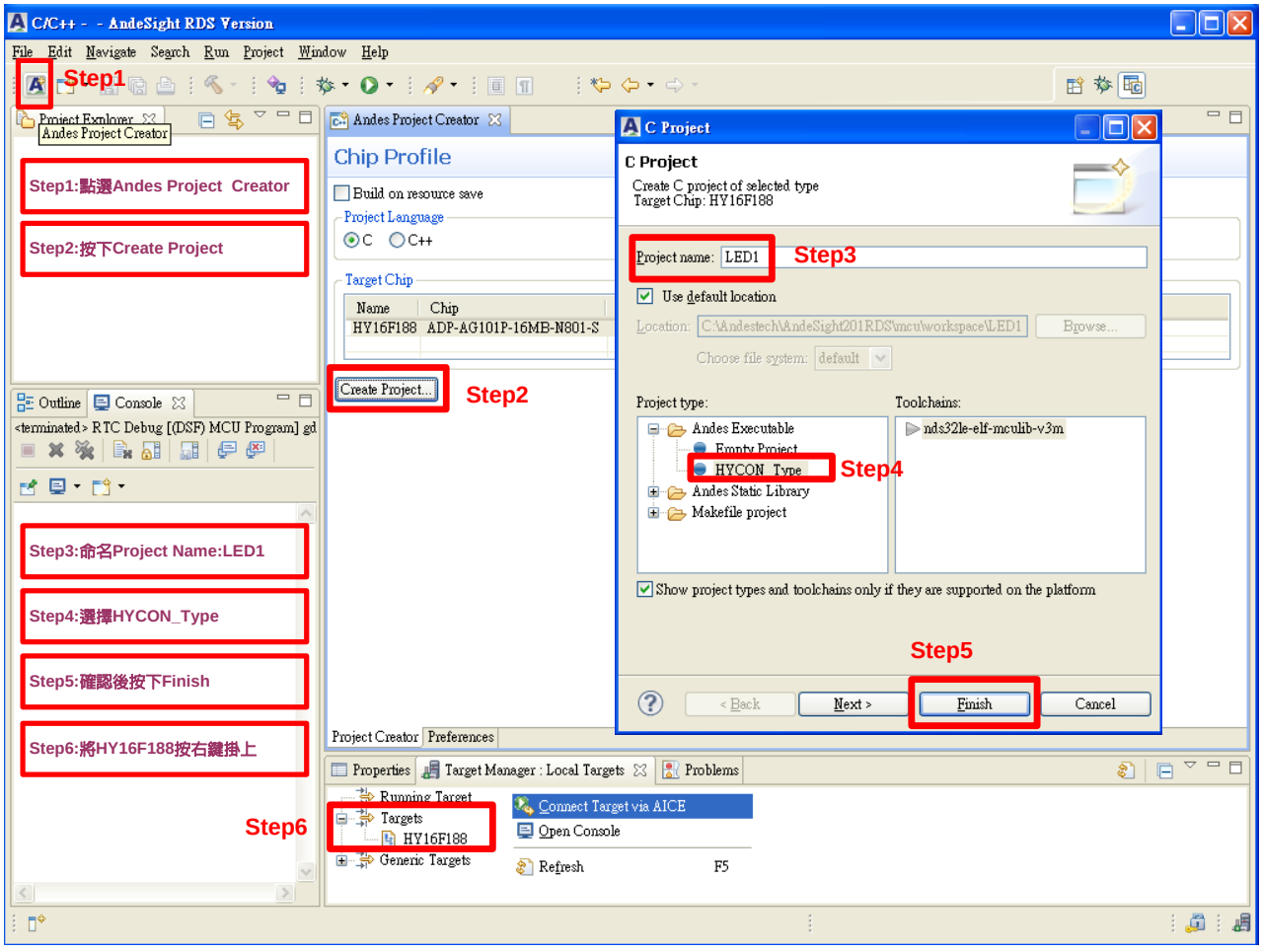
※01：Connect PC/NB to AICE by USB
※02：Red light: communication fail; green light: communication normal
※03：2-wire type JTAG connection port
※04：EDM connection port



6.IDE Project Configuration

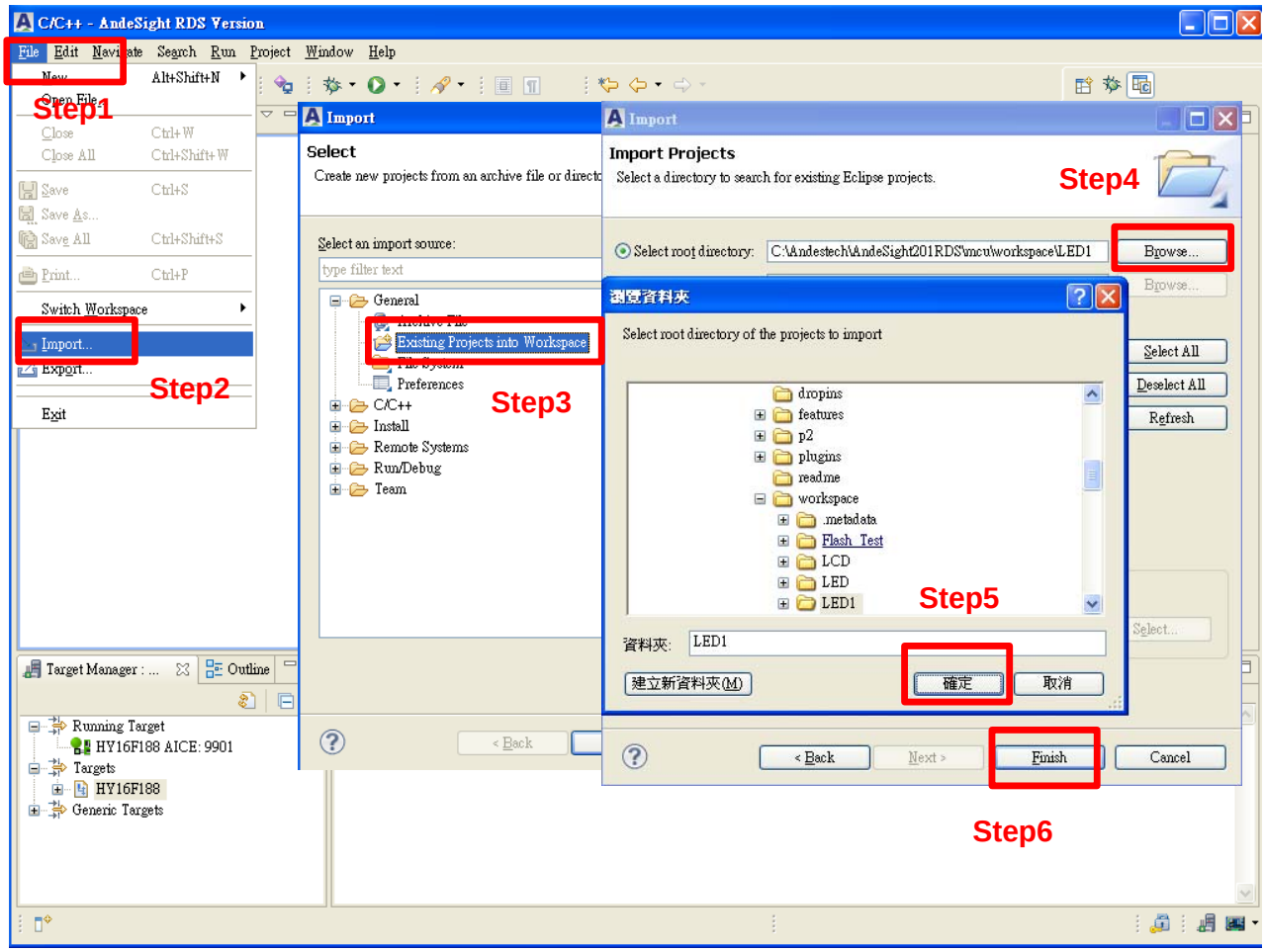
6.1 New Project

Step 1: Click Andes Project Creator
Step 2: Press Create Project
Step 3: Name Project Name:LED1
Step 4: Select HYCON_Type
Step 5: After confirmation, press Finish
Step 6: Click right key to add HY16F188



6.2 Open File

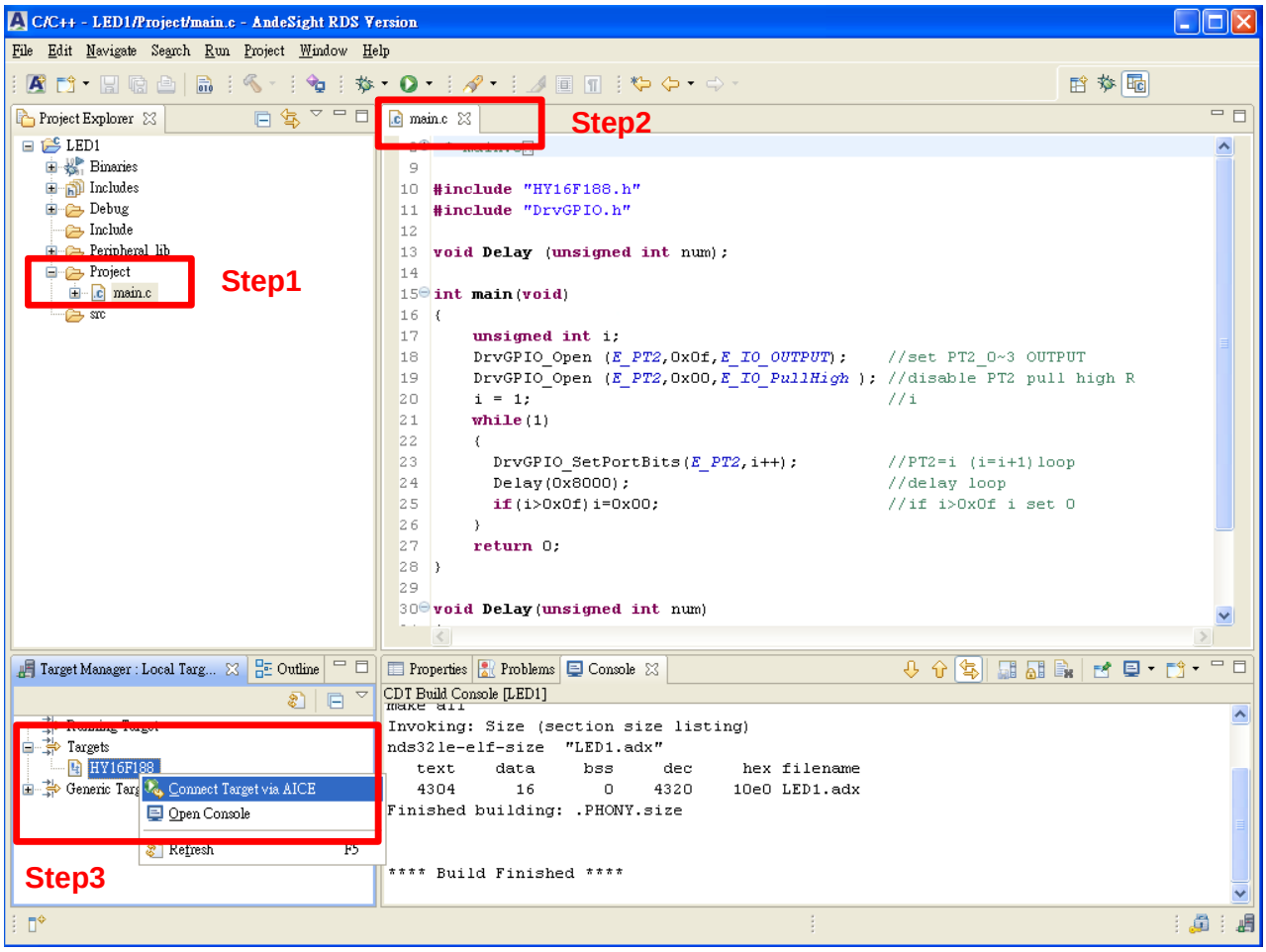
Step 1: Click File
Step 2: Press Import
Step 3: Select Existing Projects into Workspace
Step 4: Press Browse
Step 5: Open file under Workspace folder and click confirm
Step 6: Press Finish to open old project



6.3 Writing Program

Step 1: Click Project and click twice main.c file
Step 2: User can write program in C language or assembly language under main.c window
Step 3: Can select IC mounting, press right key to select Connect Target via AICE

More function:
(1) Problem shown next to Console can display error message
(2) Include file can add in .h file here
(3) src folder can place C program besides main.c, Ex. SWI2C.c

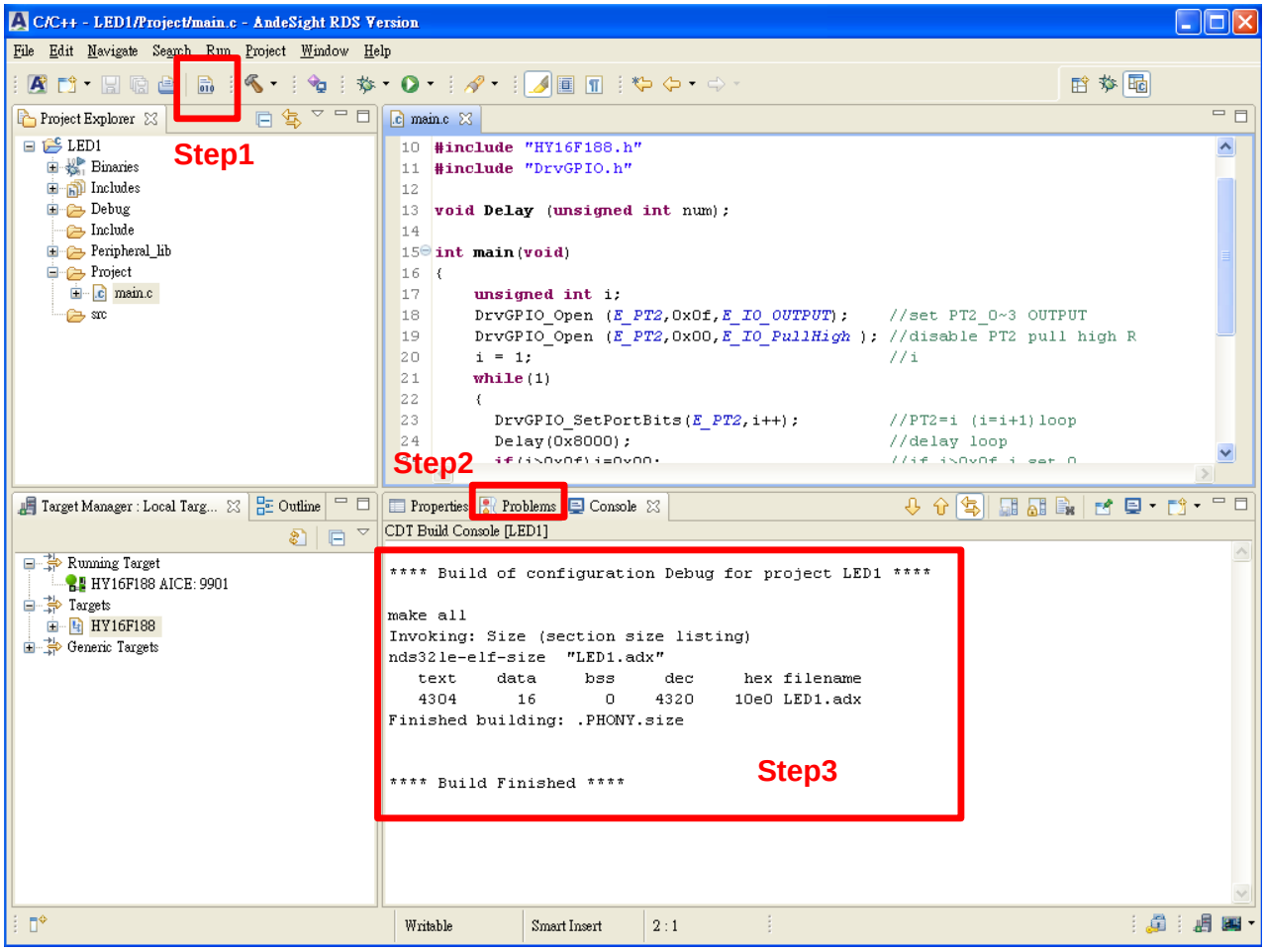


6.4 Compiling Program

Step 1: Click Build All symbol, or select under Project

Step 2: Click Problems to show error message

Step 3: Observe Console to make sure Flash usage: text=4304 and SRAM usage: data=16



6.5 Programming IC

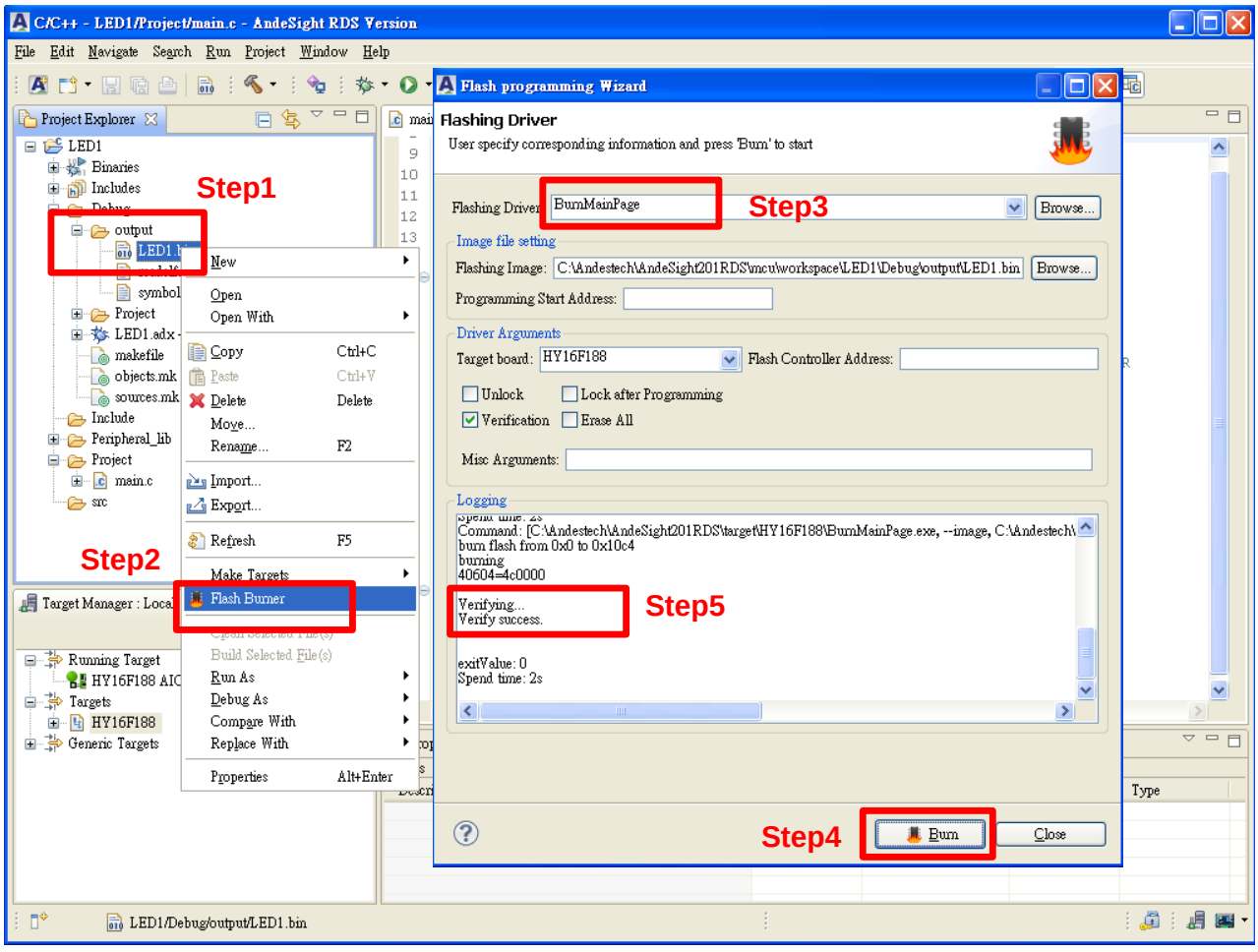
Step 1: Select LED1.bin of output under Debug

Step 2: Select to .bin file and click right key, then press Flash Burner

Step 3: Burner is default, please do not make alteration unless necessary

Step 4: Press Burn

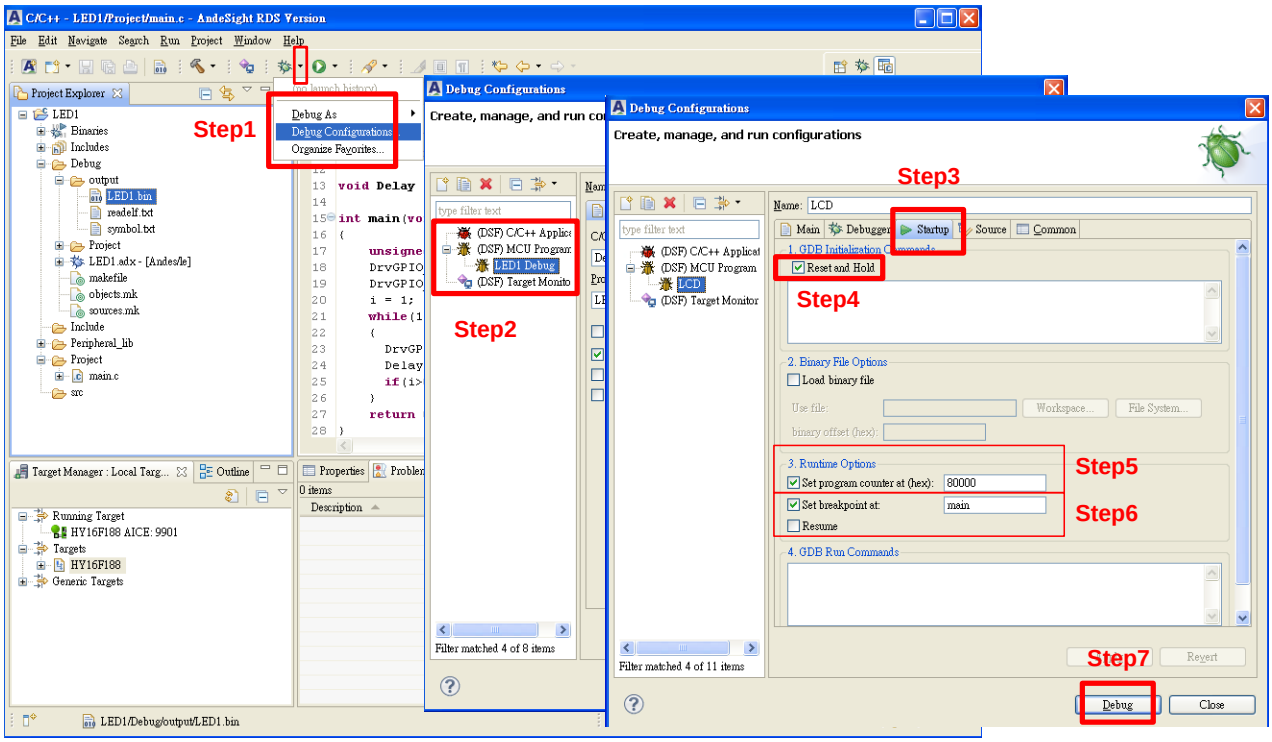
Step 5: Observe Logging graph, checking whether programming was success and the programming time



6.6 Debug Mode

Step 1: Click menu and select Debug Configuration
Step 2: Select to middle option (DSF) MCU Programmer
Step 3: Configure Startup
Step 4: Reset and Hold

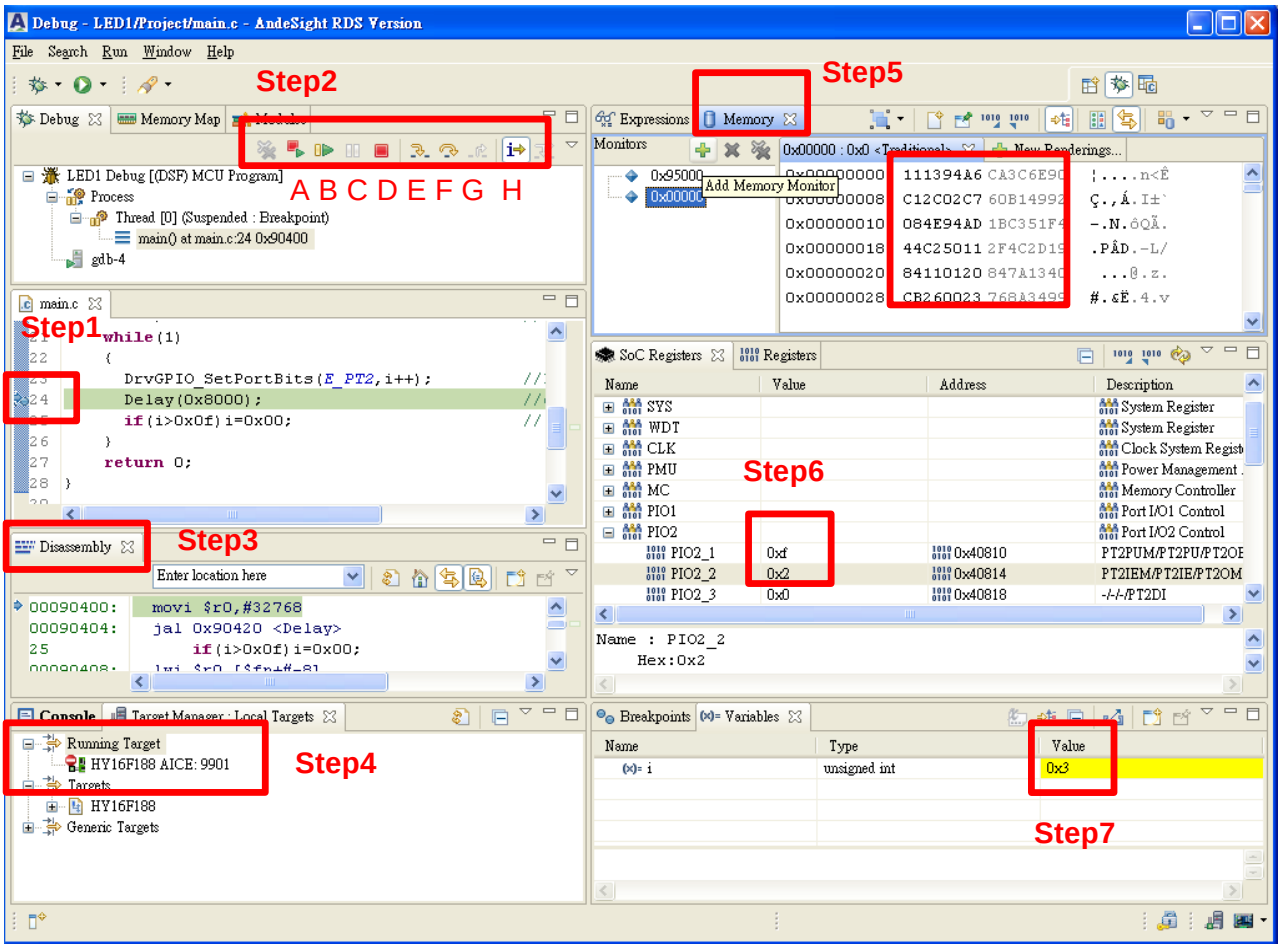
Step 5: Configure 80000 under 3.Runtime Options
Step 6: Press Apply
Step 7: Press Debug



6.7 Function List

Step 1: Double click main program, main, Ex. double click line 24 and set interval in blue
Step 2: Debug option: ABCDEFG
A(Software reset)/B(Free Run)/C(Hold)/D(Quit)/E(Step Into)/F(Step Over)/G(Jump out)
H(Can execute single step assembly language)(single step C language can be executed after cancel)
Step 3: Observe assembly language instruction
Step 4: Confirm IC is under Debug mode, the symbol will display a red circuit with white line
Step 5: Memory window can observe SRAM
Step 6: All IP register window
Step 7: Variable window to observe variables in C language

A(Software reset)/B(Free Run)/C(Hold)/D(Quit)/E(Step Into)/F(Step Over)/G(Jump out)



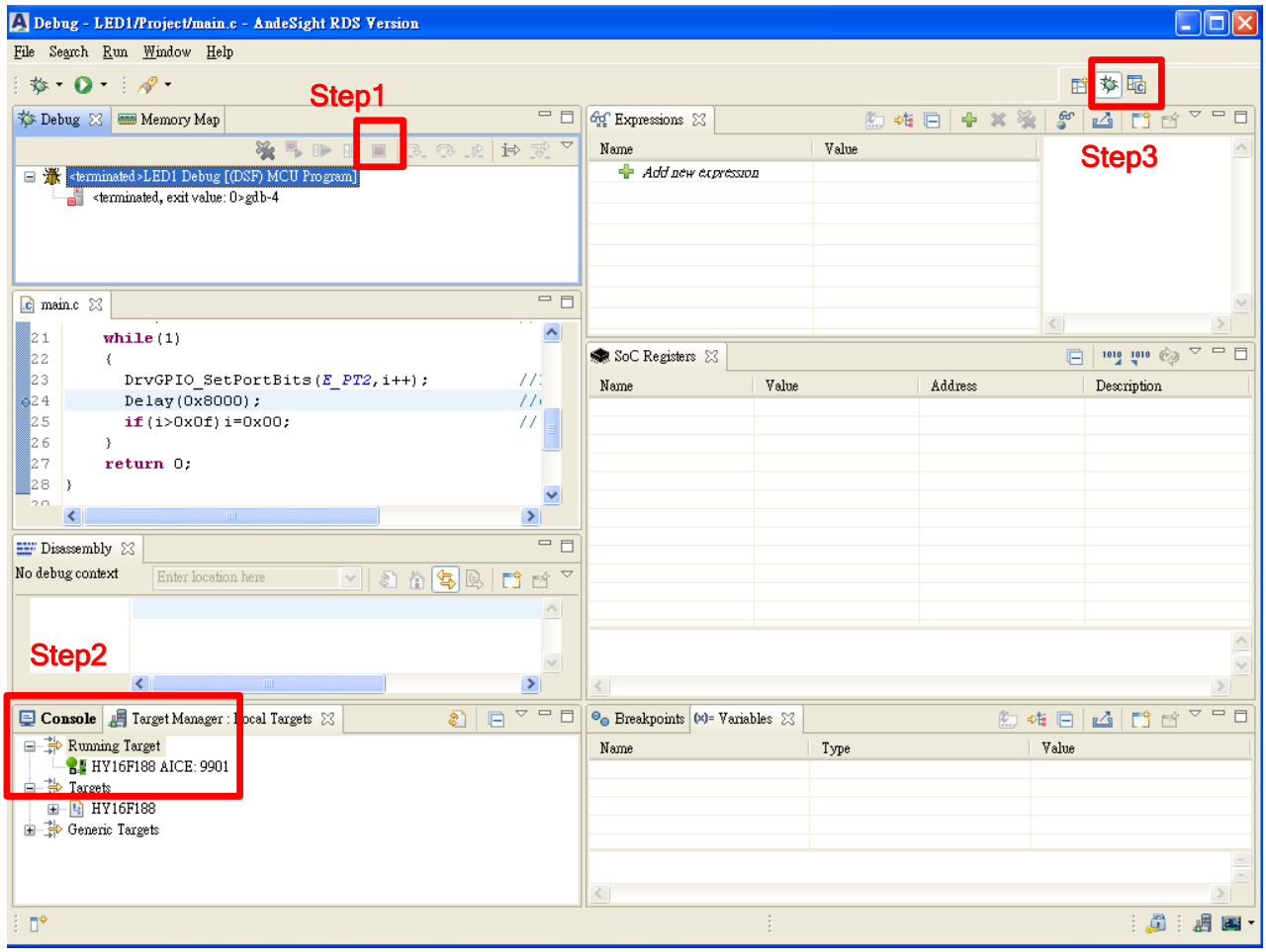
6.8 Offline Function

Step 1: Confirm Debug mode, then press leave button

Step 2: IC will quit debug mode at this time

Remove JATG at this time and re-power again. Then the program can execute the written function off-line

Step 3: Can switch to debug mode or program writing mode



7.IDE Example Program

(1) This is example program of LED
(2) The program mainly devided to declare zone/main program/vice program
(3) Additional remark to the program can be found in below table

00		
01	#include "HY16F18X.h"	//HY16F18X.H file declare
02	#include "DrvGPIO.h"	//DrvGPIO.H file declare
03		
04	void Delay (unsigned int num);	//Delay vice program declare
05		
06	int main(void)	
07	{	
08	unsigned int i;	//Variable i declare
09		
10	DrvGPIO_Open (E_PT2,0x0f,E_IO_OUTPUT);	//Set PT2.0~3 as output
11	DrvGPIO_Open (E_PT2,0x00,E_IO_PullHigh);	//Turn off PT2.0~7 internal enhanced resistor
12		
13	i=1;	//Set initial value of variable i as 1
14		
15	while(1)	
16	{	
17	DrvGPIO_SetPortBits(E_PT2,i++);	//Put variable i to PT2.0~3
18	Delay(0X8000);	//Delay loop
19	if(i>0X0F) i=0X00;	//If i>0X0F, then set i as 0
20	}	
21	return 0;	
22	}	
23		
24	void Delay(unsigned int num)	//Delay LOOP
25	{	
26	volatile int a;	
27	for(a=0;a<=num;a++);asm("NOP");	
28	}	
29		

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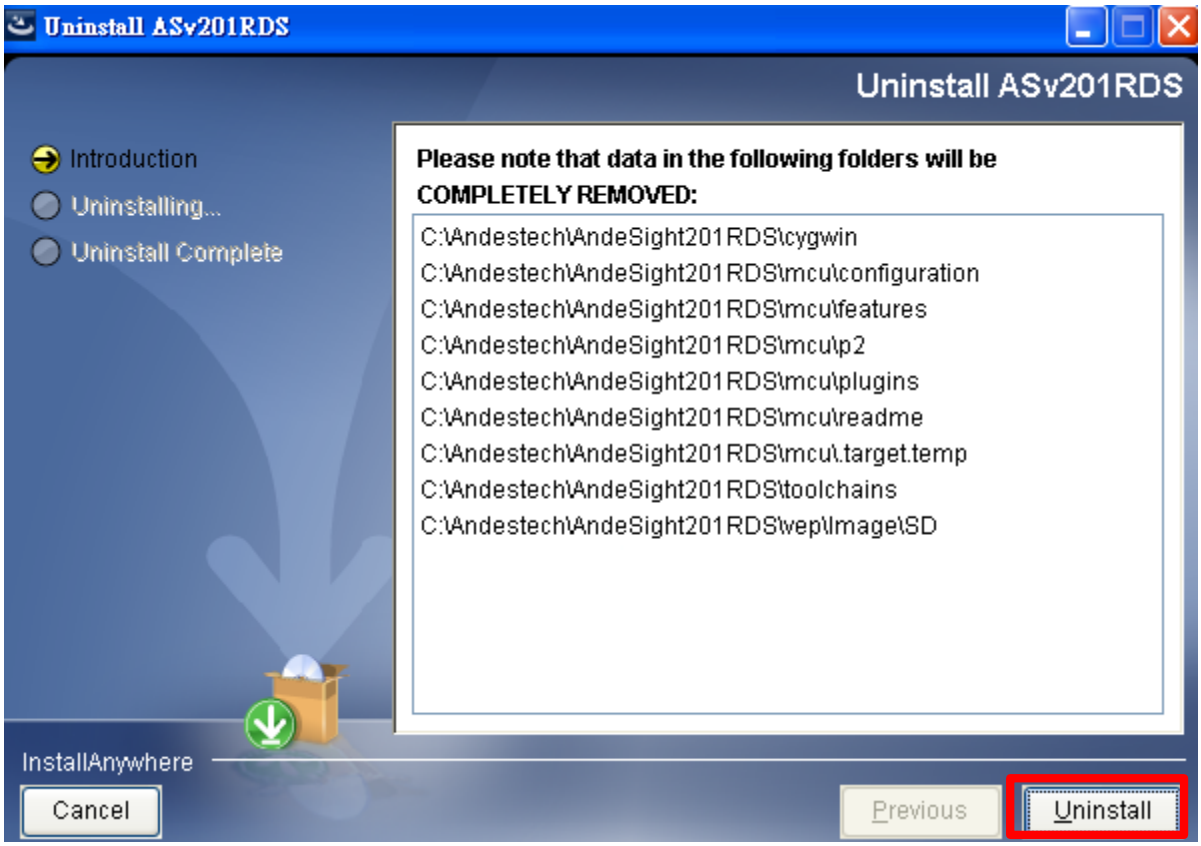
8.IDE Software Uninstall

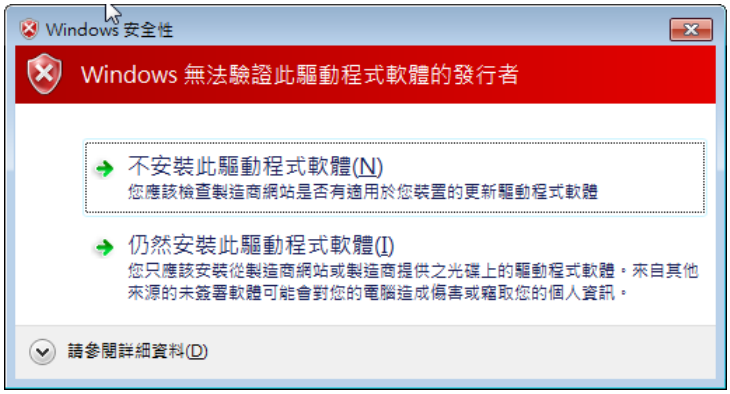
Search for ASv201RDS under "Uninstall or change a program" under control panel.
Or execute start menu, Andestech→ AndeSight v2.0.1 RDS Official→ Uninstall ASv201RDS
Below graph will show up, clicking Uninstall.



9.IDE Other Information

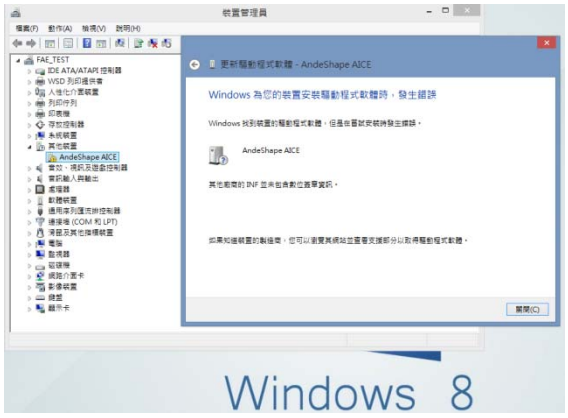
9.1 Remark 01

Install under Windows 7 system, please select "(I)".
Do not connect HY-Protool (AICE) tool before install finished.



9.2 Remark 02

Install under Windows 8 system will have more steps, please refer to Remark 03.
Below graph will show up under Windows 8.



AICE will show that digital signature of driver program in not successful under Windows 8.
User can refer to Remark 01, select (stop driver program and sign compulsory) to proceed install.
If RDS cannot be install, click right key on.EXE file and select compatible mode.

9.3 Remark 03

(A) About AICE driver program under Windows 8 system：

Through Andes test, Andesight v201 operates normally under Windows 8 (64-bit).
Andes gives solution to below install problem for your reference.

(B) Error Message Record：

Building and debugging is OK in Windows 8 64-bit, but there is an issue in the installation, that is, we use lib usb (an open source USB driver) for ICE man, but it is not signed for Windows 8. Before users install AndeSight, they need to disable this check by the following steps:

(C) Solution Record：

(1) Windows 8 Setting (change computer setups) /Normal/advance start window (Not in tradition Control Panel)
(2) Press "Start immediately" button
(3) Clicks:
"Trouble Shooting" -> "Advanced Option" -> "Start Configuration" -> Press “Restart” button.
(4) Click number button”7” after restart the computer and select "Stop driver program and sign compulsory” to turn on.
(5) Restart again, the Driver can be updated or installed in the past way..
P.S.: Restart the computer will turn back to original condition

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10. Document Revision History

Major differences are stated hereinafter:

Version	Page	Revision Summary	Date
V03	ALL	First Edition	2013/09/10